CLIMATE PROGRAM OFFICE

Climate and Societal Interactions

Climate affects thousands of decisions everyday from deciding when to plant crops to providing water for a growing city.

How can climate science inform these decisions and provide benefits to society and ecosystems?

Brian Kahn

CSI-funded researchers work closely with decision makers in many sectors to find out what kinds of climate information they need to get better results.

The Climate and Societal Interactions (CSI) program, managed by the NOAA Climate Program Office, supports research designed to make climate science clear and usable to decision makers. CSI-funded researchers work closely with decision makers to help them understand and assess their vulnerability to climate impacts, and to establish and refine climate information and outreach efforts.

State, local, tribal, and private sector partners have all benefited from lessons, tools, and technologies produced through CSI projects. As a result, the communities these partners serve are better prepared to respond to climate variability and change.

CSI's Approach

In addition to supporting interdisciplinary research, CSI works proactively with federal agencies and other organizations to coordinate activities and share strategies for understanding impacts, preparing assessments and performing adaptation research.

CSI supports research through five grant programs, each of which addresses program goals and objectives through its own approach. Efforts of individual projects are integrated across all five programs in order to foster collaboration and the transfer of tools and proven methodologies across projects.

CSI Objectives

- Identify and support innovative and broadly applicable approaches to support decision-making, particularly for better understanding of risks and vulnerabilities
- Establish a broad network of long-term efforts to support risk management and decision support at local to regional scales
- Promote the transfer of knowledge, tools, and products across climate service development efforts within NOAA and on national and international scales

Climate and Societal Interactions

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CSI Programs

RISAs tackle Dams and Drought in South Carolina

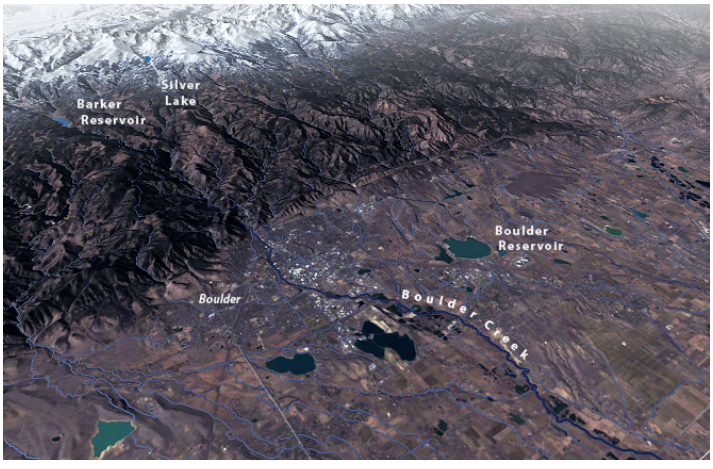
Climate effects don't stop at state borders. The **Regional Integrated Sciences and Assessments** program supports interstate research projects that address climate-sensitive issues at a regional level with a focus on interacting with stakeholders.

The Carolinas Integrated Science Assessment (CISA) was formed at a turning point for water managers in their region. With 20 dams up for relicensing, CISA worked with federal, state, and local partners to foster dialogue on how to be prepared for drought. CISA researchers responded by creating the web-based Dynamic Drought Index Tool, which provides interactive drought forecast maps for the Carolinas. CISA is now preparing the tool so that it can serve decision makers in other regions of the country.

SARP Research Helps City of Boulder Plan for Droughts

The **Sectoral Applications Research Program** funds research that focuses on water issues. Specific research priorities include identifying and reducing vulnerabilities as well as improving decision support in key socio-economic sectors related to water use and management.

SARP-funded researchers at Stratus Consulting and the University of Arizona used tree rings to reconstruct the climate for the past 437 years around Boulder, CO, to see how frequently droughts occurred and how long they lasted in the past. The researchers incorporated the reconstructed data into climate models and projected changes in climate conditions under a range of future scenarios. Based this information, local water managers made the decision to allocate financial resources to secure the city's water supply in the future.



Climate.Gov

The city of Boulder, CO, has built a system of reservoirs and pipelines that capture runoff from melting mountain snowpack in the Rockies.

Francesco Fiondella/IRI

IRI researchers help local governments in Indonesia use climate forecasts and other information to keep farmers' clearing fires under control.

IRI Works with Locals to Clear the Air in Indonesia

CSI also funds projects that work beyond U.S. borders. The International Research Institute for Climate and Society (IRI), based at Columbia University, supports climate-related projects in Africa, Southeast Asia, and Latin America.

In Indonesia, farmers have used fire to help clear the land for generations. But in 1997 and 1998, farmers' fires burned out of control, damaging huge areas of the country. As a result, the government banned burning completely. While it guaranteed cleaner air, it also put pressure on small farmers. Researchers from IRI are working with partners at local universities and provincial-level governments to use climate forecasts and satellite observations to forecast wet and dry years. With these tools, officials can now restrict fire use during dry years and ease those restrictions in wet years, creating a better compromise for all.

COCA Project Prepares Ports for Climate Change

Over 50 percent of people in the U.S. reside near the coast. The **Coastal Ocean Climate Applications** program funds research projects that help coastal communities adapt to the unique issues they face. In the Great Lakes region, climate change poses multiple threats to ports on the lakes through increased storm intensity and changing lake levels.

A project funded by COCA and run in part by NOAA state SeaGrant offices is helping ports quantify these impacts and engage the communities around them to plan for the future. In a recent project, the City of Toledo used a new tool to estimate the cost of repairing and replacing infrastructure and dredging due to climate change impacts in the future. Other ports in the region will be able to replicate their methodology in the future.